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(21) International Application Number: PCT/US99/28655 (22) International Filing Date: 6 December 1999 (06.12.99) (30) Priority Data: 60/111,301 7 December 1998 (07.12.98) US (71) Applicant (for all designated States except US): WASHINGTON STATE UNIVERSITY RESEARCH FOUNDATION [US/US]; 1615 N.E. Eastgate Boulevard, Pullman, WA 99163 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): <u>BROWSE</u> , John, A. [GB/US]; 41 McKenzie Road, Palouse, WA 99161 (US). <u>WALLIS</u> , James, G. [US/US]; 1218 South Logan Street, Moscow, ID 83843 (US). <u>WATTS</u> , Jennifer, L. [US/US]; 304 N. Van Buren Street, Moscow, ID 83843 (US). (74) Agent: STEPHENS, Donald, L., Jr.; Klarquist, Sparkman, Campbell, Leigh & Whinston, LLP, Suite 1600, One World Trade Center, 121 S.W. Salmon Street, Portland, OR 97204 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: DESATURASES AND METHODS OF USING THEM FOR SYNTHESIS OF POLYUNSATURATED FATTY ACIDS		
(57) Abstract <p>The amino acid and nucleic acid sequences of a Δ^5-desaturase enzyme and a Δ^8-desaturase enzyme are disclosed. The nucleic acid sequences can be used to design recombinant DNA constructs and vectors. These vectors can then be used to transform various organisms, including for example, plants and yeast. The transformed organisms will then produce polyunsaturated fatty acids. The amino acid sequences are useful for generating enzyme-specific antibodies that are useful for identifying the desaturases.</p>		